

W5YI

America's Oldest Ham Radio Newsletter REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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Vol. 24, Issue #6

\$1.50

PUBLISHED TWICE A MONTH

March 15, 2002

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Limited Commercial Use of Ultrawideband Technology Approved!

"Since there is no production of UWB equipment available, and there is little operational experience with the impact of UWB on other radio services, the commission chose...to err on the side of conservatism by setting emission limits when there were unresolved interference issues." ...from FCC press release.

On February 14th, the FCC voted unanimously to approve scaled-down use of ultrawideband (UWB) technology for handheld wireless communications, ground penetrating radar, vehicle collision avoidance systems and short-range, high-speed data transmissions. The technology will be used on an unlicensed basis.

UWB works across a wide band of spectrum, transmitting a series of narrow and low-power pulses which are undetectable by conventional radios. With appropriate technical standards, UWB devices can operate using spectrum occupied by existing radio services without causing interference, thereby permitting scarce spectrum resources to be used more efficiently.

The FCC's *First Report and Order* includes standards designed to ensure that existing and planned radio services, particularly safety services, are adequately protected. The FCC said they will act vigorously to enforce the rules and act quickly on any reports of interference.

The standards adopted represent a cautious first step with UWB technology. They are based in large measure on guidelines that the National Telecommunications and Information Administration (NTIA) believes are necessary to protect against interference to vital federal government operations, especially the Global Positioning System. The NTIA

is the Executive Branch agency principally responsible for developing U.S. telecommunications policy.

GPS is the U.S.-built radio navigation network that allows land, sea, and airborne users to determine their exact location, speed, and time 24 hours a day, in all weather conditions, anywhere in the world. The system consists of 24 orbiting satellites, spaced so that four are visible to any location on earth at any given time. Positions are determined by "triangulation" ...measuring the time a radio signal takes to reach a given location from three of the four visible satellites.

What is Ultrawideband?

Ultrawideband is a digitally enhanced radar technology that enables users to transmit encrypted voice and radar signals simultaneously, using short bursts of radio waves. UWB is a form of spread spectrum in that it radiates RF energy over a very wide swath of frequencies. Much of the early work in the UWB field (prior to 1994), particularly in the area of impulse communications, was performed under classified U.S. Government programs.

UWB is looked upon as an answer to the wireless industry's most pressing problem ...the lack of unallocated radio spectrum. UWB operates within frequencies already allocated to other uses, but by using millions of pulses each second spread across

THE W5YI REPORT [Pub. No. 009-311] is published twice monthly by The W5YI Group, Inc., 2000 E. Randol Mill Road # 608-A, Arlington, TX 76011

SUBSCRIPTION RATE: (U.S., Canada and Mexico) One Year (24 issues) \$24.50 • Two Years: \$45.00 • Three Years: \$64.00. • Tel. 817/461-6443

Foreign Subscriptions via Air Mail: \$39.50 per year. (Payment may be made by Check, Money Order, VISA or MasterCard payable in U.S. funds.)

Periodicals Postage paid at Arlington, TX. POSTMASTER: Send address changes to THE W5YI REPORT, P.O. Box 565101, Dallas, TX 75356

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a wide band they emit extremely little energy on any specific frequency. UWB can transmit large amounts of data over the air with relatively little power. UWB's power requirement can be 1/10,000th as much as that of a cell phone. A big advantage is that battery consumption is far less for mobile and handheld devices. And UWB systems are relatively low cost.

Backers of UWB said the new technology, with some safeguards, is harmless enough to come under the FCC's existing Part 15 rules which apply to unintentional emitters of radio frequencies. Not all agreed, especially the Dept. Of Defense and wireless operators.

Notice of Proposed Rulemaking

In May 2000, the FCC issued a *Notice of Proposed Rulemaking* proposing the use of UWB on an unlicensed basis. Huntsville, Alabama-based Time Domain Inc., one of the major ultrawideband players, also received a waiver last year from the FCC to produce 2,500 RadarVision motion detector devices which can see through-walls to report the location of people.

Police and firefighters are interested in UWB technology because it can allow them to determine if people are on the other side of the wall in a burning building or in a hostage situation. Another possible use of a solids-penetrating radar system is to find survivors after earthquakes and other disasters. Last year, the FCC granted temporary permission to use ultra-wideband devices to locate victims of the World Trade Center collapse.

US Radar Inc., and the Zircon Corp. were also granted exclusive waivers to begin marketing UWB devices on a limited basis to test their safety and effects.

US Radar concentrated on surface-penetrating pulse radar to locate land mines and artifacts. And Zircon has perfecting a high-tech stud finder for use by concrete and highway contractors.

NPRM commenters opposed to the technology say that it can interfere with existing communications. The pulses in ultrawideband are spread across spectrum used by wireless carriers, the airlines, TV broadcasting, satellite channels, the military ...and ham radio. Global positioning by satellite (GPS) users were especially worried that UWB radios would cause interference by raising the overall noise floor.

Time Domain maintains that UWB signals are undetectable, even at short range, by a receiver not designed to receive ultrawideband signals, because the pulses are sent at sub-milliwatt power levels and the energy is spread across a huge range. They say the emissions do not even exceed those of consumer hair dryers and other household appliances and do not pose a safety threat by blocking other communications.

The general consensus is, however, that more testing needs to be done before new UWB products are re-

leased on the market. An Ultrawideband Working Group has been formed, consisting of 80 companies pledging to work together to ensure the safety of the technology.

NTIA study

The NTIA recently completed a study of UWB communications in response to the FCC's proposal to authorize unlicensed UWB communications. Its report ran to 150 pages.

NTIA said it was especially concerned about the potential for interference to critical and/or safety-of-life telecommunications, many of which operate in spectrum designated as the "restricted frequency bands." The Global Positioning System (GPS) is an example of a critical radionavigation system that operates in several of the restricted frequency bands, NTIA said.

The NTIA concluded, however, that UWB generates some interference but could not produce enough power to interfere with satellite operation.

The FCC was set to approve the use of ultrawideband wireless technology last December but postponed action at the last minute. While many agreed with the delay, companies interested in exploiting ultrawideband saw it as a setback. They felt it was a strike back attack from GPS-based companies that were afraid of losing location and tracking business to UWB.

FCC approves UWB technology

In the February 14th Order, the FCC elected to restrict UWB devices to spectrum bands above 3.1 Gigahertz, well above the 1.6 GHz range used by GPS and military communications systems. Sprint PCS wanted to keep UWB above 6 gigahertz to guarantee that it would not interfere with their own wireless operations. The FCC also imposed severe restrictions on the power UWB applications may use and spurious emissions emitted from UWB devices must be carefully contained.

The FCC's decision was welcomed by several companies hoping to use the technology to link devices in the home and office like telephones, televisions, entertainment systems and digital cameras. But the power level approved was a thousand times less than wanted by some UWB marketers. In some cases, the FCC restricted use to law enforcement, scientific researchers, the medical profession, and certain industries like construction firms.

The FCC explained the limitations were to dispel the fear that UWB's powerful signals would interfere with GPS and military operations or broadcasts from television and radio stations.

The "Radar Vision" equipment Time Domain built under that FCC waiver will have to be redesigned. The existing products they have now won't be legal to operate under the new rules. Time Domain says the new prod-

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ucts will not be as effective as the ones produced under the waiver. On the web see: <www.timedomain.com>.

While industry believes the new UWB rules are too restrictive, the Dept. of Defense called the FCC's UWB ruling a "reasoned and balanced approach" of protecting critical national security systems from frequency interference while allowing commercial deployment of new technologies. The DoD said the FCC's restrictions were "the minimum" necessary to avoid interference with military systems, including GPS. It added that it would carefully monitor deployment of ultrawideband devices to ensure national security is not jeopardized.

The Commission admitted the rules may be overly protective and pledged to conduct its own testing and monitoring of UWB products that come to market to ensure there isn't any interference. The FCC said it intends within the next six to twelve months to review the standards for UWB devices and issue a *Further Notice of Proposed Rule Making* to explore more flexible standards and address the operation of additional types of UWB operations and technology.

UWB applications approved

Mostly used now by the U.S. military, ultrawideband allows for wireless communications and accurate readings of location and distance that have a wide range of applications. The FCC put severe restrictions on UWB devices operating in the crowded radio frequencies below 960 MHz. Only ground-penetrating radars used by mining companies and public safety and scientific research firms can operate at that level. Here is a recap of the UWB Order.

Imaging Systems:

Provides for the operation of GPRs (ground penetrating radars) and other imaging devices under Part 15 of the FCC rules subject to certain frequency and power limitations. The operators of imaging devices must be eligible for licensing under Part 90 (Private land mobile radio services), except that medical imaging devices may be operated only by a licensed health care practitioner. At the request of NTIA, the FCC will notify or coordinate with NTIA prior to the operation of all imaging systems. Imaging systems include:

Ground Penetrating Radar Systems:

GPRs must be operated below 960 MHZ or in the frequency band 3.1-10.6 GHz. GPRs operate only when in contact with or within close proximity of, the ground for the purpose of detecting or obtaining the images of buried objects. The energy from the GPR is intentionally directed down into the ground for this purpose. Operation is restricted to law enforcement, fire and rescue organizations, to scientific research institutions, to commercial mining companies, and to construction companies.

Wall Imaging Systems:

Wall-imaging systems must be operated below 960 MHZ or in the frequency band 3.1-10.6 GHz. Wall-imaging systems are designed to detect the location of objects contained within a "wall," such as a concrete structure, the side of a bridge, or the wall of a mine. Operation is restricted to law enforcement, fire and rescue organizations, to scientific research institutions, to commercial mining companies, and to construction companies.

Through-wall Imaging Systems:

Must be operated below 960 MHZ or in the frequency band 1.99-10.6 GHz. These systems detect the location or movement of persons or objects that are located on the other side of a structure such as a wall. Operation limited to law enforcement, fire and rescue organizations.

Medical Systems:

These devices must be operated in the frequency band 3.1-10.6 GHz. Medical imaging systems are used to "see" inside the body of a person or animal. Operation must be at the direction of, or under the supervision of, a licensed health care practitioner.

Surveillance Systems:

Although technically these devices are not imaging systems, for regulatory purposes they are treated in the same way as through-wall imaging and will be permitted to operate in the frequency band 1.99-10.6 GHz. Surveillance systems operate as "security fences" by establishing a stationary RF perimeter field and detecting the intrusion of persons or objects in that field. Operation is limited to law enforcement, fire and rescue organizations, to public utilities and to industrial entities.

Vehicular Radar Systems:

Provides for the operation of vehicular radar systems in the 24 GHz band using directional antennas on ground transportation vehicles provided the center frequency of the emission and the frequency at which the highest radiated emission occurs are greater than 24.075 GHz. These devices are able to detect the location and movement of objects near a vehicle, enabling features such as near collision avoidance, improved airbag activation, and suspension systems that better respond to road conditions.

Communications and Measurement Systems:

Provides for use of a wide variety of other UWB devices, such as high-speed home and business networking devices as well as storage tank measurement devices under Part 15 subject to certain frequency and power limitations. The devices must operate in the frequency band 3.1-10.6 GHz. The equipment must be designed to ensure that operation can only occur indoors or it must consist of hand-held devices that may be employed for such activities as peer-to-peer operation.

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CUTTING EDGE TECHNOLOGY

Hitachi (Tokyo, Japan) has developed the world's smallest RFID device called the "mu-chip." It is so tiny it can be embedded in paper and folding does not hurt it.

Among its applications are use in confidential documents, product identification, pharmaceutical management, gift cards and certificates, inventory control... Cost is about 16¢ each. It operates in the 2.45 GHz ISM band.

Electronic serial numbers and more. The European Central Bank is working with technology partners on a hush-hush project to embed radio frequency identification tags into euro bank notes by 2005. "The RFID also allows money to carry its own history," by recording information about where it has been. [Reported by EE Times.]

Procter & Gamble is already testing RFID (radio-frequency identification) chips to replace bar codes on its products. The RFID chips can be scanned right through merchandise containers so products on an entire grocery shelf or in an unopened carton can be inventoried in the same time it takes to scan a single bar-coded item. Check out <www.rfid.org>

Parents no longer have to preview a movie before the kids watch it.

Sanyo's new line of DVD players has a feature called TV Guardian which allows parents to filter inappropriate language from DVD's. Parents simply select pre-programmed alternative language choices to replace "adult language" with wording more appropriate for family viewing.

Many states are trying to craft laws that will allow the Segway Human Transporter to use sidewalks. Segway is the 80-pound self-balancing battery-powered motorized scooter that, according to its inventor, will revolutionize human travel. New rules have already become law in New Hampshire, New Jersey, North Carolina and New Mexico and six other states are on the verge of passing them.

Under the New Hampshire law, Segway riders would have the same rights and duties as pedestrians but would be required to yield to walkers. Cities and towns would have the right to regulate their use. The law also establishes a supervisory committee to study how the scooters fit in with pedestrian traffic.

So far, the scooters are only being sold for commercial uses at a price of about \$8,000 each, but the company hopes to sell them to individuals, for less than half that, in about a year. More info on the Web at: <www.segway.com>.

Know where your spouse, teenager or anyone is at all times ...or where they have been to an accuracy of five feet! Telematics (the marriage of wireless communication and GPS information technology) originally intended to aid in the recovery of stolen automobiles and tracking errant parolees is now available as a mass market consumer item. The GPS (Global Positioning System) sensor is small ...only 3 by 4 by 1 inch.

"SecuraTrak Pro" enables subscribers to use their telephones or web browsers to determine the location of a vehicle. The device can even tell you when a vehicle is driven outside a boundary you've established or at excessive speeds. If for any reason that boundary is violated, an automatic notification of the event is delivered over the wireless cellular network to the responsible person.

You can also poll the SecuraTrak (firm is based in San Francisco) database and request to see a "bread crumb trail," or history of the locations where the automobile has been over a specified period of time. It even sounds an alarm if the device is disconnected.

You can access real-time location - or information on the route followed by a vehicle in many ways - over the web, telephone, fax, e-mail or pager. You "call" the GPS sensor online by going to password-protected: <www.securatrak.net>.

Cost is \$424 (\$549 for the deluxe version) plus \$49 for activation. A \$9.95 monthly monitoring fee also applies. Now available at such stores as CompUSA and Fry's Electronics.

SecuraTrak is also working on a small rechargeable "Personal Edition" (available this fall) that can be placed (or hidden) in a backpack, purse or any other location. See: <www.securatrak.com>.

EMERGING COMMUNICATIONS

Sirius Satellite Radio has launched its satellite radio service in Denver, Houston, Phoenix, and Jackson, Mississippi and plans to go nationwide by August. Cost is \$12.95 month. It has 100 channels, 60 music and 40 news and entertainment.

Competitor, XM Satellite Radio (\$9.99 a month) introduced its service nationwide three months ago and already claims 30,000 subscribers.

Satellite radios and antennas are manufactured by leading makers and carried by such retailers Circuit City and Best Buy. Equipment cost is about \$250. General Motors will make XM-radios an option in its lineup next year. Sirius has agreements with Ford, BMW and DaimlerChrysler.

In a few years' time, Internet access aboard airliners will become commonplace. Analysts forecast that in-flight Internet access will grow to a \$35 billion market in a decade. Research indicates about 10 percent of 200 passengers on a flight will use the service. It will eventually be expanded to cruise ships, the railroads ...maybe even busses. But it is getting off to a slow start.

Boeing Co. was granted a license by the FCC three months ago to offer high-speed in-flight Internet access, e-mail and television to commercial airliners.

Connexion, was a joint venture between the Boeing company and the nation's three major airlines, American, Delta and United. The service uses special antennas aboard the planes to receive broadband satellite-based Internet access. Passengers use their own computers on board for the hookup. The idea is to give passengers the same service that they have at home or in the office at a cost of about \$20 per hour.

Fifteen hundred planes were to have been hooked into the Connexion network by mid-2002. But U.S. airlines have temporarily put Connexion on hold. At least until the economy improves. Lufthansa, the German airline, is still going ahead with it. They are running a three month test in a Boeing 747 jumbo jet. Check out: <www.boeing.com/connexion>.

Another Internet-in-the-air plan is the Tenzing system. Tenzing Communications, Inc., like Boeing, is headquartered in Seattle ...partly owned by Boeing competitor, Paris-based Airbus.

The Tenzing plan calls for a special in-flight computer server to be refreshed periodically, allowing passengers to send and receive e-mail and view several hundred thousand popular Web sites.

The Tenzing system is not true real-time connectivity. Tenzing's technology is based around a special on-board data server accessible via a cable to the passenger's seat. Passengers access the server which periodically sends and receives

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bursts of data, refreshing cached Web sites and sending and receiving e-mail.

Under Tenzing's service, customers would pay a flat fee of \$4.95 an hour over North America and \$9.95 an hour on international flights; reading or sending email would cost an extra 50 cents a page. Certain Web sites could be accessed in flight for free.

The service currently is narrowband which poses no problem for e-mail. The cost of installing Tenzing's more "stripped down" technology on aircraft has been estimated to be 10 times less than it will cost to install Boeing's Connexion technology. As the market emerges, Tenzing will upgrade their network to broadband using Hughes global in-flight broadband satellite service.

Tenzing uses the phone system wiring already installed on the backs of airplane seats. But they may have to reinstall the cabling. Airlines are removing seat-back telephones that, because of the high per-minute charges, are not being used. Instead, customers are using their own cellular telephones while the plane is on the ground. Checkout: <www.tenzing.com>

Teens prefer the Internet to telephone. CyberAtlas reports on a new survey from AOL which found that the Internet is now the primary communication tool for 56 percent of all U.S. teenagers. E-mail and "IM" (Instant Messaging) are extremely popular.

COMPUTERS & SOFTWARE

The good news. U.S. sales of video games totaled \$6.35 billion last year. The bad news. The U.S. video game industry lost another \$1.9 billion due to rampant piracy, mostly from illegal operations located in Korea and China.

Crackdown by various states on unsolicited commercial e-mail has been largely unsuccessful because there is no way for spammers to determine in which state a recipient lives. California, Colorado, Nevada and Tennessee all have laws requiring the subject line of all advertising e-mail to be labeled as such. Many states have laws against falsified, inaccurate or missing routing information.

Some states (such as Washington) have ruled that junk e-mail statutes violates the Constitution because it unduly interferes with the free flow of information in borderless cyberspace.

INTERNET & WORLD WIDE WEB

Forrester Research found that nearly 70% of Web travel buyers used multiple online discount sites in the past 12 months to buy travel online.

Many airlines offer their best travel deals on the Web. A major reason is that they don't have to pay a travel-agent commission or their own reservation agent to handle the transaction. The big question is which websites should your use.

The biggest and best of the all-purpose travel websites are: Expedia <www.expedia.com>, Travelocity <www.travelocity.com>, and Orbitz <www.orbitz.com>. And searching them will reveal different travel options and prices ...even for the same airline.

But you also need to check Southwest Airlines Internet Specials at <www.southwest.com> since they do not furnish their low fares to all other travel sites.

Low price travel bidding websites such as Hotwire <www.hotwire.com> and the "name your own price" Priceline <www.priceline.com> frequently offer even lower prices, but various restrictions apply.

Sites such as <www.site59.com> and <LastMinuteTravel.com> specialize in last minute getaways. They work with a variety of travel providers to continuously locate unsold major airline seats, hotel rooms and rental cars - assembling them into real-time "guaranteed available when you see them" packages.

Eliminated is the typical 7 or 14-day advance purchase requirements in order to get a low price. The *Wall Street Journal* and the *New York Times* have both run feature stories on these two operations.

Online travel has indeed recovered from the Sept. 11th downturn.

New research released by Nielsen NetRatings shows that traffic to Orbitz rose 72 percent between September and January, while traffic to Travelocity was up 43 percent in the same period, and visits to Expedia were up 14 percent.

According to comScore, record numbers of Internet users are visiting travel sites. About 94.3 million people visited a travel site in January 2002, up 9 percent from a month earlier, and beating the previous record of 94 million set in August 2001 before the terrorist attack.

Expedia had the most visitors of any travel site in January 2002, followed by Travelocity and Orbitz which had about

the same.

Online and computerized education is increasing! A study by Interactive Educational Systems Design found that over 40 percent of all high schools already offer online courses or plan to during this school year. A further 17 percent plan to offer them in the future. Thirty-two percent of public school districts will adopt online learning for the first time this year.

Traffic to adult education sites has increased by 60 percent since 1997, according to Fulcrum Analytics. These sites provide training, preparation for standardized tests, seminars, and graduate degrees, among other services.

And according to a report by eMarketer, 24 percent of US organizations are now using electronic learning to train employees, up from 16 percent last year. Instructor-led training is decreasing.

According to ISP-Planet, America Online (AOL) is by far the largest consumer ISP in the US. At year end 2001, one Web user in five had an AOL connection.

In December 2001, AOL had more than 30 million subscribers. Its closest competitor, MSN, had 8 million subscribers.

Reuuters reports that online casino ads grew by 170 percent last year, from 911 million impressions in December 2000 to 2.5 billion impressions in December 2001. Jupiter Media Metrix says that online casino advertising is now the fifth largest online advertising category, up from eleventh a year ago.

WASHINGTON WHISPERS

FCC is looking into relaxing the rules that govern high-speed (broad band) Internet service across traditional wireline telephone lines. Providers of digital subscriber line (DSL) service are complaining that they face more regulatory hurdles than cable modem service. Two thirds of the nation's 10 million broadband subscribers have cable modems. A decision is expected by year end.

ID's for every American is making headway among state and national politicians. The idea is to eliminate fraudulent identification such as that used by the Sept. 11th hijackers. Rather than

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come up with a new identification card, state driver's licenses - long the ID used everywhere - will be updated with the newest "biometric" authentication technology ...such as embedded digitized finger and hand prints, face recognition schemes ...and retina scans.

Updated state driver license cards will also serve as a 'smart card' platform for a wide range of electronic services. Congress has already directed the U.S. Department of Transportation to develop a set of standards for what will amount to a national ID card.

The AAMVA (*Association of American Motor Vehicle Administrators*) is working on a standard biometric format to use on all driver's licenses so that state and federal officials will be able to identify criminals who cross state lines. The ID will be used to tap into a number of underlying databases.

FTC says cell phone radiation protection shields are a fraud and offer no protection from brain cancer. On Feb. 20th, the Federal Trade Commission filed lawsuits in federal court against two companies that sell devices that supposedly protect users from electromagnetic radiation emitted by cellular phones.

The FTC says that the metallic, postage-stamp-sized radiation shields sold by Stock Value 1 (Boca Raton, FL) and Comstar Communications (W. Sacramento, CA) for \$29.95 do not block electromagnetic energy as advertised. "There is no scientific evidence that their products work...." FTC said. Furthermore, the shields interfere with the phone's signal.

Experts say you're far more likely to be hurt talking on your cell phone while driving, than you are by the radiation. On the Web see: <www.ftc.gov>.

AMATEUR RADIO NEWS

A new packet radio station aboard the International Space Station is in operation and normal operation has resumed. AMSAT's Frank Bauer, KA3HDO, reports that the ISS crew upgraded the old system with a new packet module that was originally sent into space on the STS-105 Discovery mission. The old system, crippled with a dead backup battery for RAM, had been operating in a digipeat mode using the NOCALL call sign and other ROM de-

faults.

The new module, using the callsign RS0ISS, is using a specially developed ROM set with standard ISS defaults, a new battery and an extended memory.

Although the mailbox function has been activated, ground stations are discouraged from using it. Currently, there is no computer hooked up to the packet system; also, the crew will be much too busy to respond to individual messages posted there.

Frequencies will remain the same: uplink on 145.990 MHz; downlink on 145.800 MHz.

The installation and checkout of the packet module resulted from a team effort between the Russian team (led by Sergei Samburov, RV3DR) and the U.S. team. During the past month, the team developed a set of crew procedures that were reviewed and approved by specialists at both Energia and NASA. (*AMSAT News Service*)

Technical papers are being solicited for presentation at the 21st Annual ARRL and TAPR Digital Communications Conference to be held this September in Denver, Colorado. Submission of papers is due by August 5, 2002.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs to meet, publish their work, and present new ideas and techniques. Software defined radio, digital voice and digital satellite communications, global positioning systems, APRS, DSP, TCP/IP networking and AX.25 and other wireless networking protocols are just some of the topics that will be covered.

Conference registration and additional details at: <www.tapr.org/dcc>.

Looking over the database of ham operators... There are more than 722,000 Amateur Radio station callsigns held by individuals in the FCC's Amateur Service database. Nearly 40,000, however, are expired and in the two year grace period. And more than 31,000 of those in the grace period hold Novice, Technician and Tech Plus licenses.

Or to put it a different way, while Novice, Technician and Tech Plus operators make up 54% of all callsigns in the FCC's Amateur Service database, these same classes account for 78% of all station call signs in the two year grace period.

This leads one to conclude that many of the lower class level radioamateurs are not sticking with the hobby and renewing.

Ham clubs and Extra Class operators account for half of all "Vanity" station call signs issued.

Almost half of the 37,771 "Vanity" station call signs issued by the FCC are held by Extra Class licensees (18,323). And more than half of the 7,500 Club stations hold a "Vanity" call sign (3,815).

FCC Amateur Radio Enforcement

Tejroop J. Dhillon, K6TJD (West Hills, CA) has been cited by the FCC for deliberately interfering with the W6NUT (Los Angeles) repeater, using false identifications and playing tape recordings over the air.

The most recent instance apparently occurred on January 19, 2002. Additional instances "...will result in enforcement action..., including a monetary forfeiture of up to \$7,500 and license revocation." Additionally, operation on unauthorized frequencies will result in equipment seizure, FCC said. Khillon is to respond to the allegations within 20 days.

Thomas D. Batista KC2DDD (Corona, NY) and Gerardo Arias

N2IFU (Staten Island, NY) have been contacted by the FCC for allegedly operating an uncoordinated repeater with an output on 147.020 MHz and input on 143.020 MHz, a frequency not allocated to the Amateur Radio Service.

The repeater, which does not identify as required is apparently used as a "reverse auto-patch" and is causing interference to coordinated repeaters. Continued operation on 143.020 MHz "...will result in a fine or imprisonment," FCC said.

The operators have been directed to provide: 1) full details about the operation of the repeater; 2) the identity of the control operators, if any; 3) the call signs of the users; 4) names and addresses of any unlicensed users; and 5) the location of the repeater within 20 days.

Furthermore, the FCC also wants to know the identity of the landlord or site manager if the repeater is located on property that the repeater owners do not own or rent.

The trustee of the Amateur Radio Club of Clarion repeater W3ARC (Strattanville, PA), Don Mock

N3IHC (Clarion, PA) has been directed to respond to a complaint from the Mahoning Valley Amateur Radio Association charging that their W8QLY repeater operating on 146.745 MHz, is receiving interference from the Clarion ARC repeater W3ARC, operating on 146.75 MHz.

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Mahoning says their repeater is coordinated and that the Clarion repeater is not.

The rules (Sec. 97.205) states that where interference between a coordinated and an uncoordinated repeater exists, "the licensee of the uncoordinated repeater has primary responsibility to resolve the interference."

The Clarion ARC has been directed to respond to the complaint and to furnish documentation indicating that the Clarion repeater is coordinated. "If it is not coordinated, describe what steps you are taking to obtain coordination or to alleviate the interference. If it is Clarion's position that the interference is inconsequential, please document that conclusion.

John A. Green, Jr. KG4RFI (Mobile, AL) has had his new Technician Class license grant "set aside" (placed "on hold") based upon complaints about his operating Amateur Radio transmitting equipment after his previous license (KD4TTE) was canceled.

The FCC said it had information that Green operated unlicensed on the W4IAK Mobile Amateur Radio Club repeater on 146.820 MHz ...supposedly as an emergency communications equipment "test" and at various other times on repeaters on 146.685 and 147.090 MHz in the Baldwin County area.

The FCC directed Green to explain any operation between the cancellation of his General Class license KD4TTE on Sept. 14, 2001 and the grant of KG4RFI on Jan. 24, 2002. Failure to respond within 20 days will result in dismissal of his KG4RFI application.

Agents from the Hayward, CA FCC field office visited **Stanley R. Clewett, KF6IKC (Redding, CA)** on February 5, 2002 to inspect his radio equipment. The inspection was prompted by a Web site Clewett maintained that showed photographs of his 10KW linear amplifier operating on CB Channel 6.

The FCC is in the process of issuing a *Notice of Violation*. Further details are not yet available. All antennas at Clewett's site have been taken down.

Scott E. Kamm, N0UGN (Hinton, IA) was warned by the FCC that he has been monitored operating on 156.300 and 174.000 MHz – frequencies not authorized to the Amateur Service – and deliberately interfering with an Amateur repeater operating on 146.910 MHz. Continued such activity will subject Kamm to a fine, seizure of his radio trans-

mitting equipment and non-renewal of his Amateur Radio license.

Ronald A. Mondgock KA3OMZ (Burlington, NJ) was warned by the FCC that his station has been heard operating in the 75-meter Amateur band – a frequency not authorized to him under his Novice license.

Karl E. Simonson KS9E (Gurnee, IL) is embroiled in a dispute involving the Adams County Amateur Radio Emergency Service and their club call sign. The FCC advised him on Dec. 27, 2001 that his application for the AC9ES station callsign had been set aside and that he had no authority to use it.

Simonson had applied for the AC9ES call sign on Dec. 12, 2001 in his stated capacity as trustee for the Adams County Radio Emergency Service club. The FCC later learned that (1.) Simonson was dismissed from the club in March 2001 after being unable to account for certain club funds and certain funds collected for the club in his capacity as Volunteer Examiner and (2.) the club revoked his trusteeship of the club station. A club officer was then appointed as trustee for AC9ES, the club call sign. The Commission granted that application on June 1, 2001.

The Adams County Sheriff's Department has indicated to the FCC that it works closely with the Adams County Amateur Radio Emergency Service club and that it is the same club that dismissed him as a member.

It thus appears that Simonson may have formed another club bearing the identical name. The FCC questioned why he would use the TIN (Taxpayer Identification Number) of a previous club and one in which he is not a member.

The FCC has directed Simonson to "...demonstrate your standing, if any, to apply for AC9ES as trustee for the Adams County Amateur Radio Emergency Service club."

The FCC also said that Simonson's application for a club callsign of which he is neither the trustee or a member raises "...serious questions regarding representations made to, and candor in dealing with, the Commission; and may reflect upon [his] qualifications to hold an Amateur license."

The FCC sent a letter to the ARRL VEC concerning five examination sessions that took place in Claxton and Statesboro, Georgia in 2000 and 2001. The irregularities at these sessions

were reported to the FCC by the ARRL VEC. Eight examinees are being recalled for retesting.

The ARRL/VEC accreditations of all Volunteer Examiners present at the Feb. 10, 2001 instructional class, will be discontinued. These examiners are: Ellie Waters, W4CJB; Cheryl L. Waters, W4CLW; Joanne D. Sharpe, KF4WFN; John W. Sharpe, WA4BE; Joseph A. Horne, N4ZA; George B. Grant, KF4WPU; Robert T. Jernigan, W4RTJ; Kathy L. Lanier, KD4MVY; Charles M. Aulick, KF4MLT and Lawrence A. Lewis, K4RRR.

The VE status of two examiners earlier suspended, Charles F. Roberts, AI4A, and Marshall R. Thigpen Jr., W4IS are being maintained, however.

Kathryn K. Tucker AA6TK (La Mirada, CA) has again been asked to provide information to the FCC concerning the control operators of the W6NUT (Los Angeles) repeater (of which she is the trustee) covering a 14 consecutive day period. The information is to be provided by March 31, 2002. It will not be necessary to provide a summary of the transmissions as earlier requested.

Tucker was also reminded that, as of September 12, 2001, the W6NUT repeater may be operated only under local or remote control, and that automatic control is not to be resumed without approval from the District Director of the FCC Los Angeles Field Office.

The FCC has declined to get involved in a repeater dispute involving the Gerald D. Hogue (Conway AR) KD5CYA repeater and the AC5RU repeater belonging to Tom E. Lee (Jerusalem, AR.) The FCC said it was unclear whether or not the KD5CYA repeater was properly coordinated.

The KD5CYA repeater was coordinated in April 1998 by the Arkansas Repeater Council. After repeated acts of vandalism, the repeater was moved after verbal permission was granted by the coordinator. The permission was not granted in writing. Later the coordinating personnel changed and Lee was told to move the repeater back to its original location since it was too close to the Ava, Missouri repeater.

The FCC said "After reviewing the submissions and all relevant information, we decline to intervene in this dispute. It is our position that in this case BOTH parties are responsible for solving the interference and we urge them to do so in the best interests of Amateur Radio."

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AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of March 2002:

| Radio District | Group A | Group B | Group C | Group D |
|----------------|---------|----------|-----------|---------|
| | Extra | Advanced | Tech/Gen. | Novice |
| 0 (*) | AB0UC | KI0SE | (***) | KC0MLC |
| 1 (*) | AA1ZO | KE1MC | (***) | KB1HWP |
| 2 (*) | AB2RE | KG2RO | (***) | KC2JEO |
| 3 (*) | AA3YO | KF3EC | (***) | KB3HPX |
| 4 (*) | AG4PC | KV4GG | (***) | KG4RUV |
| 5 (*) | AD5HX | KM5XO | (***) | KD5RLX |
| 6 (*) | AE6CB | KR6EZ | (***) | KG6KBN |
| 7 (*) | AC7RG | KK7XD | (***) | KD7QBT |
| 8 (*) | AB8MP | KI8KD | (***) | KC8TDZ |
| 9 (*) | AB9ED | KG9RA | (***) | KC9BDF |
| N. Mariana | NH0Z | AH0BB | KH0NP | WH0ABP |
| Guam | (**) | AH2DO | KH2WA | WH2AOC |
| Hawaii | (**) | AH6RE | KH7ZZ | WH6DGR |
| Am.Samoa | AH8W | AH8AI | KH8DP | WH8ABF |
| Alaska | (**) | AL7RR | KL1HR | WL7CVN |
| Virgin Isl. | (**) | KP2CS | NP2LU | WP2AIN |
| Puerto Rico | WP3T | KP3BN | WP3PL | WP4NOY |

* = All 1-by-2 and 2-by-1 call signs have all been assigned. AA-AK-by-2 now being assigned.

** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have all been allocated in all districts. (K-by-3 and W-by-3 are not assigned under the sequential call sign system. Available only to the Vanity Call Sign system.)

Note: The following prefix numerals are now allocated to Puerto Rico (KP, NP, WP3 or 4), Hawaii (AH, KH, NH, WH6 or 7) and Alaska (AL, KL, NL WL1-0)

[Source: FCC Amateur Service Database, Washington, DC]

Amateur Service Census as of March 1st

| Year | Extra Class | Advanced Class | General Class | Tech & Tech+ | Novice Class |
|---|-------------|----------------|---------------|--------------|--------------|
| 1997 | 73,737 | 107,024 | 116,629 | 314,532 | 66,551 |
| Grand Total 1997: 678,473 | | | | | |
| 1998 | 74,066 | 104,958 | 113,682 | 319,818 | 62,243 |
| Grand Total 1998: 674,767 Increase: -0.55% | | | | | |
| 1999 | 74,855 | 103,636 | 111,162 | 329,821 | 56,245 |
| Grand Total 1999: 675,719 Increase: 0.14% | | | | | |
| 2000 | 75,985 | 103,048 | 109,787 | 338,334 | 50,630 |
| Grand Total 2000: 677,784 Increase: 0.31% | | | | | |
| 2001 | 95,243 | 88,082 | 136,056 | 321,012 | 43,966 |
| Grand Total 2001: 684,359 Increase: 0.97% | | | | | |
| 2002 | 97,812 | 86,372 | 138,374 | 317,854 | 39,930 |
| Grand Total 2002: 680,342 Increase: -0.59% | | | | | |

FCC REDESIGNS AMATEUR SERVICE WEBSITE

On February 20th, the FCC's Wireless Telecommunications Bureau released a bulletin notifying the public that it had redesigned and launched its Amateur Radio Service website. The new design provides faster access to licensing and filing information

The FCC's new Amateur Radio Service website is now located at: <wireless.fcc.gov/services/amateur>. Licensees who had bookmarked the previous Amateur Radio Service website should update to the new URL.

The retooled structure breaks out topics more clearly, emphasizes the most frequently sought information, and uses distinct sectioning and summaries to help users scan the site more quickly.

Among the information most requested by amateur radio operators is licensing policies and procedures and instructions on how to perform common filing tasks. These topics now reside in two new sections prominent on the home page.

Under "Licensing", users will now find direct links to information on

- The Licensing Process
- Exams and Exam Fees
- Volunteer Examiners (VEs)
- Volunteer Examiner Coordinators (VECs)

Under "Common Filing Tasks", users can link to specific help on just the single tasks they may need to perform, including

- Changing an Address
- Checking an Application Status
- Obtaining a Vanity Call Sign
- Renewing a License
- Replacing a License

The new design clusters Public Notices, News Releases, and other officially released documents affecting amateur radio operators on the right side of the page. On the left side of the page, the new navigation reflects restructured and easier-to-read information on the Amateur Radio Service, the Sequential Call Sign System, Vanity Call Signs, and Communications Policies.

The new design is a part of the Wireless Telecommunications Bureau's continuing effort to meet the needs of the Amateur Radio Service operators as identified in focus groups, letters, phone calls, and e-mails.

The FCC said that questions or comments concerning the website should go to Bobby Brown at (202) 418-0539 (e-mail: <babrown@fcc.gov>) or Jennifer Bush at (202) 418-0586 (e-mail: <jbush@fcc.gov>.)

For information concerning the Amateur Radio Services, call William T. Cross at (202) 418-0680 or e-mail him at: <bcross@fcc.gov>.

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GEOCACHING, HIGH-TECH TREASURE HUNTING

Similar to radio direction finding, Geocaching is an entertaining adventure game for GPS (Global Positioning System) users. It is wildly popular and spreading like wildfire! More than 100 thousand people are participating in some 40,000 hunts going on in 107 countries right now!

Simply put, geocaching is treasure hunting for the 21st century. Armed with a GPS receiver, a set of coordinates that tell you the location of a cache, and a healthy sense of adventure, players go out and look for caches of goodies...

Geocaching (pronounced Geo-cashing) stems from GEO for geography and CACHING for the process of hiding a cache. A cache in computer terms is information usually stored in memory to make it faster to retrieve, but the term is also used in hiking/camping as a hiding place for concealing and preserving provisions.

The basic idea of Geocaching is to have individuals and organizations set up caches all over the world and share the locations of these caches on the Internet. GPS users then use the location coordinates to find the caches. Once found, a cache may provide the visitor with a wide variety of rewards. All the visitor is asked to do is if they get something they should try to leave something for the cache.

You can find the coordinates of the cache nearest to you by entering your zip code, state or country into the geocaching search engine at: <www.geocaching.com>.

The programming on this site is first rate! It even tells you how far away a "treasure" is located from your zip code. We found more than a dozen caches within ten miles of our Texas home. Caches are found all over the world ...even at such out of the way places as a monastery in Tibet, the tourist area of Bali (Indonesia), a crater in Saudi Arabia, at Mount Kinabalu, Malaysia, a tree in Kenya (where you carve your initials) and in the desert near the pyramids (Egypt.) Such is the reach of GPS and the Internet.

A GPS unit is a electronic device that can determine your approximate location (within just a few feet) anywhere on the planet. Coordinates are normally given in Longitude and Latitude. You use the GPS unit to navigate from your current location to another location. Depending on the complexity of the device, some units have their own maps, built-in electronic compasses, ...even voice navigation. (Mine, a Garmin Streetpilot III has a female voice the directs you in the direction of any coordinate.)

All you need to do is be able to enter what is called the "waypoint" (coordinates) of where the geocache is hidden into your GPS unit. Then you simply go in the direction of the waypoint. Sound easy? It frequently isn't.

A GPS unit only knows how close the site is as the crow flies (...a direct line). You may be a mile from the

cache, but there may be a river in the way or a mountain – you get the picture. And your cache may be hidden "off trail" under a rock and not near a road. After locating the cache, you take something from the cache, leave something in its place and then log it into the logbook which is always part of the cache you found.

After locating a few geocaches in your area, you'll be ready to place your own. You list the existence of your cache on the Internet. Because each cache is reviewed by a volunteer, it may take up to 2 days to have your cache posted to the web site. All cache sites are rated from 1 (easiest) to 5 stars in terms of difficulty and terrain.

For example, a cache hidden at S 34° 51.056 W 058° 08.042 near Buenos Aries by Jose A. Machao, LU7JCN (an Argentinian ham operator) has a Difficulty rating of: 1½ stars and Terrain: 1 star -- meaning the cache should be relatively easy to find. A cache placed at the Great Wall of China -- about 2.5 hours northeast of Beijing -- had a Difficulty and Terrain rating of 3½ stars each ...meaning it is harder to find.

Geocaching "clubs" (called "Geo-teams") are also springing up everywhere. They have names like the Georgia Geocachers Association, Tulsa Area Geocachers Brunch, Central Coast Geocachers of Monterey, Calif., Chicagoland Consortium of Geocachers, Greater Cincinnati Geocachers, the Cach-U-Nuts and (interestingly) the Wichita (Kansas) Area Geo-Nudists. (Wonder what treasure is in their cache?)

A cache can come in many forms but the first item will always be its logbook. In its simplest form a cache can be just a logbook and nothing else. The logbook contains information from the originator of the cache and notes from the cache's visitors. A logbook might contain information about nearby attractions, coordinates to other unpublished caches, and even jokes written by visitors. If you get some information from a logbook you should give some back. At the very least you can leave the date and time you visited the cache.

Larger caches may consist of a waterproof plastic bucket placed in the local terrain. The bucket will contain the logbook and any number of more or less valuable items. You never know what the founder or other visitors to the cache may have left there for you to enjoy. A popular cache item is a disposable camera with which you take your photo and return the camera to the cache. The originator then frequently posts the photos to the Web.

Items in a bucket cache could be: Maps, books, software, hardware, CD's, videos, pictures, money, jewelry, tickets, antiques, tools, games ...you name it! It is recommended that items in a bucket cache be individually packaged in a clear zipped plastic bag to protect them.

There are also several versions of the game. Multicaching is when your first cache gives coordinates to the next location. Such is life in the new millennium.

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STATUS OF VANITY STATION CALL SIGNS

According to the Vanity Call Sign Headquarters web site (located at: <www.vanityhq.com>) the last user-chosen station call signs issued to radio amateurs were those selected more than four months ago. The most recent vanity calls granted were applied for on October 22, 2001.

The FCC is still accepting and acknowledging electronically-filed Vanity call sign applications, but is holding them until the paper applications have all been received and placed in the correct order by receipt date. Due to the Anthrax scare, all government mail had to be shipped out-of-state and sterilized. Somehow, not all of the paper Vanity applications were received back at the FCC in Gettysburg, PA.

Once all have been accounted for, they will be matched up with electronically-filed applications of the same receipt date and both paper-filed and electronically-filed applications run in parallel.

The ARRL recently sent out a bulletin stating that the holdup may be coming to an end. It seems that additional information from a lost October 23rd Vanity application had to be obtained. The missing application also caused "at least for now" rescinding of Vanity grants that had been previously approved for October 23 and 24. The League said that it "...estimates that some 1800 vanity applications now are in the FCC's processing pipeline, the majority of them filed electronically."

"The current holdup stems from the fact that some mail destined for the FCC's Gettysburg, Pennsylvania, office last October was diverted to Washington, DC, with other FCC mail for anthrax decontamination. That mail, which included more than 100 vanity applications filed on paper, never got back to Gettysburg, where the FCC processes all vanity applications. Since the FCC's policy is to give equal priority to electronic and paper vanity applications, the whole process ground to a halt when the paper applications went missing."

The ARRL pointed out that "Payment receipts were not lost, however, and using that information, FCC Wireless Telecommunications Bureau personnel in Gettysburg scrambled to contact known applicants via e-mail or telephone to have them resubmit copies of their vanity applications. That process was largely successful. Right now, it appears that only three vanity applications filed during the last couple of weeks of October remain outstanding. The FCC has been unable to reach the applicants via e-mail or telephone, however."

"The FCC has been considering issuing a formal public notice with a cutoff date for outstanding applicants in the Amateur Vanity and in the other similarly affected FCC services to respond - a process that could take weeks. In the meantime, the ARRL has been assisting the FCC in efforts to contact the missing applicants, collect the necessary information and get it to the Commission as soon as possible. If that effort is successful, the vanity logjam could begin to break as early as next week," ARRL said.

"Once vanity processing resumes, the FCC is not expected to process all of the remaining applications in a single batch. It's more likely that the processing would be spread out over a period of a few days."

NFCC SENDS OUT BULLETIN ON RFID DEVICES

On February 16th, Dick Isely, W9GIG, Secretary of the National Frequency Coordinators' Council, Inc. mass-mailed the following bulletin and asked that it be passed on to all radioamateurs.

"I am sure all of you have been following, to one degree or another, the progress of SAVI Technologies, Inc. proposal to the FCC that it be allowed to develop and market a family of Part 15 devices designed to operate on the amateur 70-cm band. There are numerous problems with this proposal, but the FCC appears to favor SAVI's proposal. It has now been given a Rule-Making number (RM-10051.)

"It is rumored the Defense Department (primary user of this spectrum) is going to file reply comments opposing SAVI's proposal. However, there is a lot of money and potential profit at stake and the Commission appears to be VERY business-oriented. Therefore even if other branches of our federal government do officially oppose SAVI, the outcome could still go against the licensed users of this spectrum segment.

"Time is very short and the delays due to anthrax screening of the U.S. mail going to all branches of the federal government render this mode of communication unuseable. E-mail with or without attached files, fax, and FCC E-file documents are the only way to communicate our opposition.

"This is a political process. It is imperative that you send electronic messages (CC your FCC e-mail and faxes) to your elected federal representatives - to both their local and Washington, DC e-mail addresses. If 10,000 or more hams respond to this call, the SAVI proposal will become a hot political potato - hopefully one that is so hot that the Commission drops it.

"The ARRL has made four excellent filings in opposition to SAVI every step of the way. These filings and introductory text are now posted on the NFCC website at: <www.arrl.org/nfcc>. You will also find links there that will take you to the FCC E-file web page. Please take the time to download and read these documents before you write your messages. Your comments must be factual and non-abusive, but very firm in your opposition.

"I urge you to spread the word among all of your ham friends and non-ham friends who are friendly to Amateur Radio. Now is the time for action! Let's use the Internet to defend our radio service."